

AMENDMENTS TO THE CLAIMS

1-50. (Canceled)

51. (New) A microbattery, comprising:

a substrate;

a conductive layer comprising a metal element formed directly on a surface of the substrate;

a thin-film cathodic layer comprising a sulfide of the metal element electrochemically formed directly on the conductive layer;

a thin-film electrolyte layer formed directly on the cathodic layer; and

a thin-film anodic layer formed directly on the electrolyte layer.

52. (New) The microbattery according to claim 51, wherein the metal element is copper, and the cathodic layer comprises copper sulfide electrooxidized onto the copper.

53. (New) The microbattery according to claim 51, wherein the cathodic layer has a thickness between 1 and 3 μm .

54. (New) The microbattery according to claim 51, wherein the substrate comprises a semiconductor material.

55. (New) The microbattery according to claim 51, wherein the substrate has a plurality of cavities, and wherein the conductive and thin film layers are formed on an inner surface of the cavities.

56. (New) A microbattery, comprising:

a semiconductor substrate having a plurality of cavities;

a conductive layer formed directly on a surface of the substrate including an inner surface of the cavities;

a thin-film cathodic layer formed directly on the conductive layer;

a thin-film electrolyte layer formed directly on the cathodic layer; and

a thin-film anodic layer formed directly on the electrolyte layer.